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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/850,300	05/07/2001	Daniel D. Christensen	06005/36796	2168

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EXAMINER	
IQBAL, NADEEM	
ART UNIT	**PAPER NUMBER**
2114	

DATE MAILED: 07/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/850,300	CHRISTENSEN ET AL.	
	Examiner	Art Unit	
	Nadeem Iqbal	2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

NADEEM IQBAL
PRIMARY EXAMINER

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Amendment

This office action is in response to an amendment filed on May 7, 2004. Following rejections are applied for the same reasons as set forth in the previous office action mailed on Jan. 30, 2004.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miskimins et al., (U.S. Patent number 6230109).

Miskimins teaches (col. 2, lines 38-40) a high-speed digital cable tester. Cable testing system also determines the continuity paths of the cable and also detects intermittent faults. He thus teaches limitations pertain to a wiring fault detection unit coupled to a protocol bus to measure electrical characteristics. He also teaches (col. 4, lines 21-25) that there are two main subsystems of the invention, a signal processing subsystem and a dynamic stimulation subsystem. The signal processing subsystem transmits test signals through individual pins and

conductors of the cable under test, determines the continuity path. He thus teaches a wiring fault detection unit that uses the measured electrical characteristics to determine fault type. He does not explicitly disclose a wiring fault diagnostic manager coupled to the wiring fault detection unit. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to realize that Miskimins would include the wiring fault diagnostic manager coupled to the fault detection unit, since he teaches a signal processing subsystem that transmits test signals through individual pins and conductors of the cable under test, determines the continuity path.

3. Claims 2-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miskimins et al., (U.S. Patent number 6230109) in view of Mavretic (U.S. Patent number 6046594).

As per claim 2, Miskimins does not explicitly disclose a plurality of smart field devices that communicate with the controller. Mavretic teaches (col. 2, lines 19-21) a method and apparatus of measuring electrical characteristics between a power source and a load and a first circuit that detects a set of electrical characteristics and a second circuit to receive the set of electrical characteristics. He thus teaches the smart field devices as claimed. It would have been obvious to a person of ordinary skill in the art to include the first circuit and the second circuit into the invention of Miskimins since Miskimins already teaches a signal processing subsystem that transmits test signals through individual pins and conductors of the cable under test, the stated inclusion would clearly provides a desirable advantage to be able to measure electrical characteristics between a power source and a load, there is advantageous, therefore providing motivation to a person of ordinary skill in the at for the stated inclusion.

As per claims 3 & 4, Mavretic teaches (col. 2, lines 19-21) a method and apparatus of measuring electrical characteristics between a power source and a load and a first circuit that detects a set of electrical characteristics and a second circuit to receive the set of electrical characteristics. Therefore the inclusion of Mavretic invention into Miskimins would provide the diagnostic manager residing within the linking device. The stated inclusion is motivated for the same reasons as stated related to claim 2 above.

As per claim 5, Miskimins teaches (col. 4, lines 24-26) a signal processing subsystem that determines continuity path, count intermittent faults, saving the test results to data file, and displaying or printing the results. He thus teaches limitations pertain to a memory, a processor, and a display coupled to the processor. He also teaches (col. 4, lines 58-60) that the system is controlled by the software loaded into memory of computer and sends control signals.

As per claims 6 & 7, Mavretic teaches (col. 2, lines 19-21) measuring electrical characteristics between a power source and a load and a first circuit that detects a set of electrical characteristics and a second circuit to receive the set of electrical characteristics. Therefore the inclusion of Mavretic invention into Miskimins would provide a signal switching unit and plurality of measurement blocks.

As per claims 8 & 9, Miskimins also teaches (col. 4, lines 58-60) the system controller by the software loaded into memory of computer and sends control signals. He thus would allow disconnecting the signal line from a communication circuit.

As per claim 10, Mavretic teaches (col. 2, lines 19-21) measuring electrical characteristics between a power source and a load and a first circuit that detects a set of electrical characteristics and a second circuit to receive the set of electrical characteristics. Therefore the

inclusion of Mavretic invention into Miskimins would provide a plurality of measurement blocks that include one of ohmmeter block, a voltmeter block, a signal generator block, ground fault detector block and a capacitance meter block.

As per claim 11, Miskimins teaches that the signal processing subsystem transmits test signals through individual pins and conductors of the cable under test, determines the continuity path. He thus would test for wiring faults that include short circuit, open circuit, a ground fault, an improper termination, quality of connection, and improper supply voltage.

As per claim 12, Miskimins substantially teaches the claimed invention as disclosed related to claim 1 above. He also teaches (col. 2, lines 38-40) a Cable testing system that determines the continuity paths of the cable and also detects intermittent faults. He thus teaches limitations pertain to a wiring fault detection unit coupled to a protocol bus to measure electrical characteristics. He also teaches (col. 4, lines 21-25) that there are two main subsystems of the invention, a signal processing subsystem and a dynamic stimulation subsystem. The signal processing subsystem transmits test signals through individual pins and conductors of the cable under test, determines the continuity path. He thus teaches connecting a signal line to one of the plurality of measurement blocks, the measured electrical characteristics to determine fault type. He does not explicitly disclose sending the measured electrical characteristics to the wiring fault diagnostic manager. It would have been obvious to a person of ordinary skill in the art to realize that Miskimins would include the wiring fault diagnostic manager coupled to the fault detection unit, since he teaches a signal processing subsystem that transmits test signals through individual pins and conductors of the cable under test, determines the continuity path, and saving the test results to data file, and displaying or printing the results. He thus would clearly send the

measured electrical characteristics to the wiring fault diagnostic manager, which is a signal processing subsystem.

4. Claims 13-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miskimins et al., (U.S. Patent number 6230109) in view of Mavretic (U.S. Patent number 6046594).

As per claims 13 & 14, Miskimins does not explicitly disclose connecting the signal line of the protocol bus to a plurality of measurement blocks as claimed. Mavretic teaches (col. 2, lines 19-21) a method and apparatus of measuring electrical characteristics between a power source and a load and a first circuit that detects a set of electrical characteristics and a second circuit to receive the set of electrical characteristics. He thus teaches a plurality of measurement blocks as claimed. It would have been obvious to a person of ordinary skill in the art to include the first circuit and the second circuit into the invention of Miskimins since Miskimins already teaches a signal processing subsystem that transmits test signals through individual pins and conductors of the cable under test, the stated inclusion would clearly provides a desirable advantage to be able to measure electrical characteristics between a power source and a load, there is advantageous, therefore providing motivation to a person of ordinary skill in the at for the stated inclusion.

As per claim 15, Mavretic teaches (col. 2, lines 19-21) a method and apparatus of measuring electrical characteristics between a power source and a load and a first circuit that detects a set of electrical characteristics and a second circuit to receive the set of electrical characteristics. Therefore the inclusion of Mavretic invention into Miskimins would also provide the capability to disconnect the signal line from a communication circuit.

As per claims 16, Mavretic teaches (col. 2, lines 19-21) a method and apparatus of measuring electrical characteristics between a power source and a load and a first circuit that detects a set of electrical characteristics and a second circuit to receive the set of electrical characteristics. He thus measures electrical characteristics including one of resistance, capacitance, signal amplitude, noise level and power supply voltage.

As per claims 17 & 18, Mavretic teaches (col. 2, lines 19-21) measuring electrical characteristics between a power source and a load and a first circuit that detects a set of electrical characteristics and a second circuit to receive the set of electrical characteristics. Therefore his detection and determination of a set of electrical characteristics would include comparing the measured electrical characteristics.

As per claim 19, Miskimins teaches (col. 4, lines 24-26) a signal processing subsystem that determines continuity path, count intermittent faults, saving the test results to data file, and displaying or printing the results. He also teaches (col. 4, lines 58-60) that the system is controlled by the software loaded into memory of computer and sends control signals. He thus would include sending wiring fault information to the user interface.

As per claims 20 & 25, Miskimins substantially teaches the claimed invention as disclosed related to claim 12 above. He also teaches (col. 2, lines 38-40) a Cable testing system that determines the continuity paths of the cable and also detects intermittent faults. He thus teaches limitations pertain to a wiring fault detection unit coupled to a protocol bus to measure electrical characteristics. He also teaches (col. 4, lines 21-25) that there are two main subsystems of the invention, a signal processing subsystem and a dynamic stimulation subsystem. The signal processing subsystem transmits test signals through individual pins and conductors of the cable

under test, determines the continuity path. He thus teaches connecting a signal line to one of the plurality of measurement blocks, the measured electrical characteristics to determine fault type. He does not explicitly disclose sending the measured electrical characteristics to the wiring fault diagnostic manager. Miskimins does not explicitly disclose connecting the signal line of the protocol bus to a plurality of measurement blocks as claimed. Mavretic teaches (col. 2, lines 19-21) a method and apparatus of measuring electrical characteristics between a power source and a load and a first circuit that detects a set of electrical characteristics and a second circuit to receive the set of electrical characteristics. He thus teaches a plurality of measurement blocks as claimed. It would have been obvious to a person of ordinary skill in the art to include the first circuit and the second circuit into the invention of Miskimins since Miskimins already teaches a signal processing subsystem that transmits test signals through individual pins and conductors of the cable under test, the stated inclusion would clearly provides a desirable advantage to be able to measure electrical characteristics between a power source and a load, there is advantageous, therefore providing motivation to a person of ordinary skill in the at for the stated inclusion.

As per claim 21, Mavretic teaches (col. 2, lines 19-21) a method and apparatus of measuring electrical characteristics between a power source and a load and a first circuit that detects a set of electrical characteristics and a second circuit to receive the set of electrical characteristics. Therefore the inclusion of Mavretic invention into Miskimins would also provide the capability to disconnect the signal line from a communication circuit.

As per claims 22 & 26, Mavretic teaches (col. 2, lines 19-21) a method and apparatus of measuring electrical characteristics between a power source and a load and a first circuit that detects a set of electrical characteristics and a second circuit to receive the set of electrical

characteristics. He thus would measure electrical characteristics including one of resistance, capacitance, signal amplitude, noise level and power supply voltage.

As per claim 23, Mavretic teaches (col. 2, lines 19-21) measuring electrical characteristics between a power source and a load and a first circuit that detects a set of electrical characteristics and a second circuit to receive the set of electrical characteristics. Therefore his detection and determination of a set of electrical characteristics would include comparing the measured electrical characteristics.

As per claims 24 & 28, Miskimins teaches that the signal processing subsystem transmits test signals through individual pins and conductors of the cable under test, determines the continuity path. He thus would test for wiring faults that include short circuit, open circuit, a ground fault, an improper termination, quality of connection, and improper supply voltage.

As per claim 27, Mavretic teaches (col. 2, lines 19-21) a method and apparatus of measuring electrical characteristics between a power source and a load and a first circuit that detects a set of electrical characteristics and a second circuit to receive the set of electrical characteristics. Therefore the inclusion of Mavretic invention into Miskimins would provide the diagnostic manager residing within the linking device. The stated inclusion is motivated for the same reasons as stated related to claim 12 above.

Response to Arguments

Applicant's arguments filed May 7, 2004 have been fully considered but they are not persuasive. As per claims 1-28, Applicants alleges that Miskimins does not teach "a wiring fault detection unit that is adapted to be coupled to the protocol bus to measure an electrical characteristic

associated with the protocol bus" and "a wiring fault diagnostic manager communicatively coupled to the wiring fault detection unit that uses the measured electrical characteristic to determine a type of wiring fault". Examiner contends that Miskimins teaches these limitations since he teaches a high-speed digital cable tester that determines the continuity paths of the cable and also detects intermittent faults. He thus teaches a wiring fault detection unit coupled to a protocol bus to measure electrical characteristics. He also teaches (col. 4, lines 21-25) that there are two main subsystems of the invention, a signal processing subsystem and a dynamic stimulation subsystem. The signal processing subsystem transmits test signals through individual pins and conductors of the cable under test, determines the continuity path. He thus teaches a wiring fault detection unit that uses the measured electrical characteristics to determine fault type. Although he does not explicitly disclose a wiring fault diagnostic manager coupled to the wiring fault detection unit. He teaches a signal processing subsystem that transmits test signals through individual pins and conductors of the cable under test, determines the continuity path, therefore performs equivalent functions to that of the claimed wiring fault diagnostic manager coupled to the detection unit.

As per claim 12, Applicants further alleges that Miskimins does not teach or suggest "plurality of measurement blocks". Examiner contends that Miskimins teaches (col. 4, lines 21-25) that there are two main subsystems of the invention, a signal processing subsystem and a dynamic stimulation subsystem. The signal processing subsystem transmits test signals through individual pins and conductors of the cable under test, determines the continuity path. He thus teaches a plurality of measurement blocks and the measured electrical characteristics to determine fault type. As per claim 2, Applicants alleges that Mavretic does not teach or suggest

"smart field devices". Examiner contends that Mavretic teaches a method and apparatus of measuring electrical characteristics between a power source and a load and a first circuit that detects a set of electrical characteristics and a second circuit to receive the set of electrical characteristics. Mavretic thus teaches the smart field devices as claimed.

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nadeem Iqbal whose telephone number is (703)-308-5228. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert W Beausoliel can be reached on (703)-305-9713. The fax phone numbers for

the organization where this application or proceeding is assigned are (703)-746-7239 for regular communications and (703)-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-305-3900.

Nadeem Iqbal
Primary Examiner
Art Unit 2184

NI